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Improved preservation of the ram spermatozoan plasma membrane using betaine in the primary fixative.

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Improved preservation of ram spermatozoa was obtained by filtration onto a Millipore filter followed by fixation in a fixative containing 23 mM betaine, which raised fixative osmolality only slightly. In samples fixed in control preparations with betaine omitted the plasma membrane had a ruffled appearance, while the betaine-containing fixative gave the plasma membrane a smooth contour which closely followed underlying structures. Betaine is known to function as an osmoprotectant in other situations, and may protect the cells from osmotic damage during the initial stages of fixation.

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